7716

Management Services in Government

August 1977 Volume 32 Number 3

Management Services in Government

Incorporating the O & M Bulletin

August 1977 Volume 32 Number 3

Published by the Civil Service Department, Management Services, in collaboration with Departmental Management Services Officers. Correspondence and contributions should be addressed to The Editor, Management Services in Government, Civil Service Department, Whitehall, London SW1A 2AZ

ISSN : 0307-8558

New subscribers outside the Civil Service may place orders for a year's supply of the journal with the Editor; orders should be accompanied by a crossed cheque or postal order for £2·56 made payable to Her Majesty's Stationery Office. (Renewal of annual subscriptions is arranged by H.M.S.O.) Subscriptions are accepted on the express understanding that the material published is for the information of the recipient and use within his organization, but is not for publication or quotation without permission.

Offprints of articles and additional copies of supplements are available from the Editor. Orders from persons and organizations outside the Civil Service must be accompanied by a cheque or postal order, made payable to the Civil Service Department. The charge for copies is: offprints 4p per page; and supplements 16p per copy. Remittances should include an appropriate amount to cover postage. Subscribers may also purchase additional copies of the publication itself at a cost of 64p per copy, including postage.

It would be helpful if recipients could check that their copy is correctly addressed. If it is not, please send details of the correct address (including the postal code, where appropriate) to the Editor, quoting the reference number shown on the present address plate.

Contents

Page

121 The Role of the Central Policy Review Staff in Whitehall
Sir Kenneth Berrill, KCB

127 Mr. S. D. Walker – CBE

128 The Management Review Programme
S. D. Walker, CBE

134 Bridging the Information Gap
J. Hunter and D. B. Crampton

144 SEO/Principal – What's in a Name?
J. McGhee

151 Data Processing Professionalism – A Must or a Myth?
D. W. Croisdale

158 The Computer Record System at Newcastle Central Office
S. E. Stapley

167 Management Consulting in Perspective

169 Management Bookshelf
Mrs. B. M. Howard

171 Letter to the Editor

172 Computer Installations for Government Departments

The Role of the Central Policy Review Staff in Whitehall

Sir KENNETH BERRILL, KCB

In the article that follows, Sir Kenneth Berrill describes the work of the Central Policy Review Staff (CPRS). CPRS started work in February 1971 with Lord Rothschild as its head; he was succeeded by Sir Kenneth Berrill in October 1974. —*Editor.*

Origins of CPRS

In October 1970 the Government issued a White Paper *The Reorganization of Central Government* (Command 4506) which, among other things, announced the creation of a small multi-disciplinary central policy review staff in the Cabinet Office.

The White Paper defined the role of CPRS as follows:

> Under the supervision of the Prime Minister, it will work for Ministers collectively; and its task will be to enable them to take better policy decisions by assisting them to work out the implications of their basic strategy in terms of policies in specific areas, to establish the relative priorities to be given to the different sectors of their programme as a whole, to identify those areas of policy in which new choices can be exercised and to ensure that the underlying implications of alternative courses of action are fully analysed and considered.
>
> The new staff will not duplicate or replace the analytical work done by departments in their own areas of responsibility. But it will seek to enlist their co-operation in its task of relating individual departmental policies to the Government's strategy as a whole. It will, therefore, play an important part in the extended public expenditure survey process described below, and it will also be available to promote studies in depth of interdepartmental issues which are of particular importance in relation to the control and development of the Government's strategic objectives.

Its size and composition

CPRS usually has about 16 to 19 members. At present it has 18. About half of these are career civil servants on short-term secondments from their departments; the other half are recruited from outside the Civil Service—from universities, industry, financial institutions and international organizations. For both career civil servants on secondment from departments, and for people brought in from outside government, the normal length of stay in CPRS is about two years. Some people have left after less than two years; some have stayed longer; and a few of those who have come in from outside government have subsequently become established civil servants.

Role of CPRS

In broad terms CPRS continues to carry out the remit given to it originally in Command 4506. Its main task is still to offer advice to Ministers collectively which will help them to relate their policies and decisions to the Government's strategy as a whole. But whereas most civil servants work within the broad framework of their Minister's policies, CPRS is not a departmental institution and, to perform its task, needs usually to set its advice in much more general terms and sometimes put forward suggestions of a radical nature. The task of CPRS is carried out in a variety of ways.

Strategy reviews

At fairly regular intervals (in principle about every six months) CPRS attempts to take stock, across the board, of the problems facing the Government, both in the shorter and in the longer term. These stock-taking exercises try to set out the objectives in the various parts of the Government's programme, the relationships between them and the constraints in achieving them; to identify gaps in the strategy, the new problems which are likely to emerge, and to suggest how these might be tackled.

The initial work of these stock-takings or strategy reviews is internal to CPRS. The results are presented to Ministers in a variety of ways. For example, CPRS may prepare a paper for the Cabinet which attempts a synoptic view of problems of Government strategy as a whole; normally the purpose of such a paper would not be to seek immediate executive decisions, but rather to give all Ministers an opportunity to have a broader debate than they would normally have in their departments or at interdepartmental meetings, and to enable Ministers to indicate some general lines of policy and guidance on priorities, to be worked out in detail later. Alternatively, these strategy reviews may result in the presentation to the Cabinet of an analysis of a limited number of central policy issues which the CPRS internal stock-taking has highlighted as deserving a wide-ranging discussion by Ministers collectively. The frequency, timing and content of such strategy presentations will vary with circumstances.

These periodic stock-taking exercises also help in determining priorities for other CPRS work; they can suggest subjects which may require study in depth; or they can suggest what are the important areas of policy coming before Ministers on which CPRS should be prepared to offer specific advice.

Major studies

Normally CPRS is involved at any one time in two or three major studies. The subjects of CPRS studies are kept confidential unless they involve widespread consultation outside government. Those at present in hand which have been publicly announced are:

(*a*) The Review of Overseas Representation, which is considering the

most suitable, effective and economic means of representing and promoting British interests overseas.

(*b*) A study of the heavy electrical industry, which is examining the problems arising from the mismatch between plant manufacturing capacity and prospective orders.

(*c*) Several studies under the general heading 'A Joint Framework for Social Policies', which are concerned particularly with the links between different but related social policies, for example the relationship between housing policy and other social policies.

Only five CPRS studies have been published: *Energy Conservation* (1974); *A Joint Framework for Social Policies* (1975); *The Future of the British Car Industry* (1975); *The Future of the United Kingdom Power Plant Manufacturing Industry* (1976); and *Population and the Social Services* (1977).

With such wide terms of reference, and a small staff, CPRS has to be selective both in the subjects it studies, and in deciding whether or not to comment on a specific issue. There are some subjects which are of sufficient importance to justify continuing work of some depth, in order to ensure that when a particular issue comes up CPRS advice can be presented to Ministers (often at short notice).

The initiative for these in-depth studies may come from a direct remit from Ministers (usually a Cabinet committee), interdepartmental discussion, or from CPRS itself.

CPRS involvement in programme analysis and review

Another aspect of the CPRS concern and involvement in the development of Government strategy and policy-making is its participation in policy reviews. CPRS is often associated with the more important departmental policy reviews. It has been involved from the outset in the system of programme analysis and review (PAR) originally announced in Command 4506. This system has been adapted over the years; but the essential features have been a regular stock-taking leading to the selection of certain departmental activities for review in depth. These reviews have concentrated on assessing the effectiveness of particular departmental activities in addition to their intended objectives, and on examining whether the objectives were soundly based. CPRS, together with the Treasury and the Civil Service Department, have participated both in the selection of these topics and in monitoring the progress of the reviews themselves. The particular contribution which CPRS has been concerned to make in this process has been to encourage the selection of topics which concern a number of departments rather than just one department, and to ensure that a suitable range of options for future action is identified and that the results are adequately presented to Ministers collectively.

Preparation of collective briefs

CPRS receives papers prepared for discussion in Cabinet and in Cabinet

committees. It then decides whether or not to prepare a brief for Ministers on any issue raised in these papers; for example if it has been following a particular issue it considers whether a short CPRS paper might aid discussion.

Such briefs will sometimes simply try to tease out the threads of the arguments set out in the paper or papers before the Cabinet or Ministerial committees, mainly to make sure that the main issues and the wider and longer-term implications of the options proposed are not lost among the detail. The briefs also provide comments other than from a departmental angle. The brief may take this process a step further in commenting on the action recommended by the Minister bringing the subject before his colleagues. These briefs, like the papers to which they relate, are circulated to all the Ministers who will be taking part in the discussion. About fifty such briefs are prepared each year but the rate is uneven; for example in one week in February last year CPRS circulated six collective briefs but there have been weeks when there were no CPRS collective briefs.

Special role of CPRS on science and technology matters

Many of the studies undertaken by CPRS have necessarily involved important aspects of science and technology in the context of broader Government policies, for example energy or industrial strategies. CPRS recently assumed more specific responsibilities for the co-ordination of Government policies in this field as described in the then Lord Privy Seal's Memorandum to the select Committee on Science and Technology (Science Sub-Committee) dated 21st May 1976. Specifically, CPRS now provides the central focus for advice and for initiating innovatory studies of a transdepartmental nature, tasks previously discharged by the Science Group in the Cabinet Office. Changes are being made to the staffing of the unit to meet this need: in particular, a Chief Scientist, CPRS, has now been appointed. It is also intended that CPRS will play an active part in the work of the newly created Advisory Council for Applied Research and Development (ACARD).

Its working relationships

CPRS is physically and constitutionally part of the Cabinet Office. It participates in the work of Cabinet committees and in a few cases provides the chairman for official committees. It has a close working relationship with the Cabinet Secretariat, particularly in identifying issues which will be coming before Ministers and where CPRS advice may be useful. In addition, members of CPRS are in daily contact with civil servants in other government departments mainly to obtain information which they require for their work but also to keep in touch with policy developments in those departments. CPRS works with and through departments; but its conclusions and recommendations are its own. In general the working relationship between CPRS and the rest of Whitehall is close and good.

CPRS believes that it is important to keep in touch with a wide range of opinion outside Whitehall. The fact that half its members are recruited from outside the Civil Service often means that it can do this more easily than many other government departments. Moreover the wide variety of its work brings it into contact with many different organizations and institutions. Finally, in undertaking studies of particular subjects CPRS often makes use of outside consultants.

Working methods

Members of CPRS usually work in small teams, consisting of between two and five people. Most people will be members of, say, three teams. Wherever possible, the teams are made up of people from different backgrounds, so that different kinds of expertise can be brought to bear on particular problems. One person is likely to find himself dividing his time between a major piece of work and smaller, and sometimes more immediate, jobs—some longer term, some shorter term. The very wide range of issues which CPRS has to cover, and the changes in circumstances and policy interests to which it has to respond, make flexible and informal working methods essential.

A comparison

It is interesting to compare CPRS with its Dutch counterpart, the Scientific Council for Government Policy.* Like CPRS, the Council (set up in 1973) is concerned with helping Ministers to establish their priorities and to ensure that their various policies are—as far as possible—mutually consistent. It provides information (though not advice) relevant to the definition of problems and the opening up of alternative options for discussion.

The most striking ways in which it differs from CPRS are, first, in its composition: it is literally a several-member Council, with a further group of senior advisers drawn from within the government service, and a permanent staff of about 20 civil servants headed by the Secretary to the Council. (This staff seems to correspond fairly closely with CPRS.)

Secondly, the Council operates very much in public. Though it reports in the first instance to the Government, through the Prime Minister's office, virtually all its reports are published. Thirdly, the Council appears to give more emphasis to the long term than does CPRS. Not only this: its present Secretary has said that it deliberately avoids discussing issues which are matters of current political debate.

Conclusion

CPRS is essentially an instrument to serve Ministers collectively and its prime function is to offer a view independent of individual Ministers

* *See* 'Long-term Planning in the Netherlands' by E. D. J. Kruijtbosch in *MSIG*, Volume 29, Number 3, August 1974.

or departments. If time permits it normally checks with departmental officials to make sure of its facts, but it is not required to inform or consult a Minister before commenting on policy for which he is responsible. It must be prepared to offer advice which is not always acceptable and to see it rejected. To fulfil adequately their task of collective responsibility Ministers acting collectively often need advice from a non-departmental point of view. CPRS is one channel for providing such advice. It is useful to the extent that Ministers find it so. The Head of CPRS from time to time discusses the work of CPRS with senior Ministers, to ensure that it is responsive to Ministerial needs and pre-occupations. But how successful it is, only Ministers can judge.

The impact of CPRS on individual departments has been varied and usually indirect rather than direct, It has not, for example, ever attempted to act as a co-ordinator of departmental planning or research units. But CPRS believes that in various ways whether by long-term strategy papers, major studies, collective briefs, participation in PARs or interdepartmental committees it has, at a relatively small cost, both helped to improve the machinery for decision-taking at the centre and helped departments to relate their individual policies to the Government's strategy as a whole.

Mr. S. D. Walker—CBE

It is with great pleasure that we learn that Mr. S. D. (Johnny) Walker has been made a CBE in the Birthday Honours List. It has become commonplace for less enlightened members of the media to attack awards to civil servants as being no more than a recognition of bureaucratic time-serving. We defy any of them to deny that Johnny Walker fully deserves his honour as a reward for indefatigable and imaginative leadership in the pursuit of management services in Government.

We recall Johnny's arrival in Treasury O & M in 1963—wet behind the ears as he put it himself—but fresh from a useful stint of fieldwork in the Pay Research Unit and full of book learning and infectious enthusiasm. His triumphant conversion of a deep study of theory—no academic has a more encyclopaedic knowledge of the literature—into practical reality would fill the pages of this edition. We can but single out his contributions to the development of MbO, accountable management, and management review (on which subject he has contributed an article to this edition of *MSIG*) and recall his important contribution to the Consultancy Group which advised the Fulton Committee.

It is a pity that Johnny never met the late Jock Simpson—to whom we paid tribute in February—for they had much in common, being enthusiastic extroverts in their work yet kindly and warmly human in their relations with other people, particularly those of us who had a job to keep up with them intellectually. Of course, no one is perfect and if Johnny has one fault it is that he is a compulsive speaker. But in Johnny's case that is not really a criticism. We hear that he is thinking of retirement—it will surely be in name only—and in wishing him well we say 'please Johnny don't ever stop talking; unlike some people you always have something worth saying'.

The Management Review Programme

S. D. WALKER, CBE, Civil Service Department

Introduction

The description 'management review' can reasonably be applied to any significant study of the management structure and supporting systems of an organization. Notwithstanding similarities in methodology there are, however, important distinctions between different types of examination of the managerial 'well being' of an organization and it would be unwise to assume that the precise nature of a review can safely be deduced from the title under which it is conducted. An essential requirement is to be quite clear as to the responsibilities and authority of those who commission a review and of those who carry it out and as to the purposes for which it is commissioned.

Current programme

Although a number of studies of this general character had been carried out on an *ad hoc* basis in the past the current programme of management reviews of departments did not begin until 1972 when the Government decided to institute regular reviews of all major departments. Proposals for the ways in which these new studies should be carried out reflected the experience gained on earlier reviews carried out by Treasury O & M (subsequently CSD Management Services). A particular example was the management review of Prison Department of the Home Office. That review was the subject of an article in the August 1970 edition of the O & M Bulletin.* The current programme, however, is the subject of specific understandings as to the general arrangements under which the reviews are carried out. Those understandings cover the purpose of the reviews, the arrangements under which they are commissioned and directed and the submission of reports.

The primary purpose of management reviews in this current programme is to help the top management of each Department to improve the effectiveness and efficiency of its organization and management including the planning and control of its resources. The reviews are commissioned by the Minister of the Department concerned and are carried out in co-operation with the Civil Service Department. They are conducted under the supervision of a Steering Committee chaired

* 'Management Review—A Case Study from Prison Department of the Home Office' by John Garrett and S. D. Walker, *O & M Bulletin* (now incorporated in *MSIG*), Volume 25, Number 3, August 1970.

by the Permanent Secretary of the Department concerned and on which CSD is represented. The final report of the Steering Committee is submitted to the departmental Minister and to the Lord Privy Seal (in his capacity as Minister in day-to-day charge of the Civil Service Department).

It will be seen that the arrangements for commissioning and directing a review take account of the responsibilities of departmental Ministers and of Accounting Officers for the conduct of the affairs of their Department. They also reflect the concept of partnership between operational and central departments by recognizing the responsibilities and interests of CSD in the staffing of departments and in the development of good management practices and supporting systems.

The supporting arrangements for carrying out a review under the direction of the Steering Committee also reflect the concept of partnership. A review team is appointed under the leadership of a senior official of the Department under review. The team leader is usually an Under Secretary or an Assistant Secretary. The team includes other staff from the Department and from CSD Management Services (Special Assignments) Division which is the CSD Division responsible for the management review programme. The CSD element of the team is normally headed by an Assistant Secretary from that Division and may include a management consultant on secondment to it.

Main procedures

Administrative arrangements for setting-up reviews including the arrangements for informing and consulting Departmental Staff Sides are now well established as are also the general procedures for conducting reviews. The review team carries out a preliminary survey on the basis of which it recommends to the Steering Committee the issues which should be examined by the team and a programme of work for so doing. Subject to the views and comments of the Steering Committee this programme is carried out in the main stage of the review. The time taken to complete both stages varies according to the size of the Department. As a rough guide the preliminary survey may take from two to three months and the main stage from four to nine months, so that a review of a large Department will probably take the best part of a year to complete.

The main stage of the review comprises a number of studies, some of which will be undertaken concurrently. Although most of these studies will be designed to be as self-contained as possible it is essential that they are also all designed to contribute to examination of the main issues identified. The leader of the review team has, therefore, to ensure close co-ordination at all stages from the preparation of detailed objectives for each study and plans for achieving them through to the discussion of draft reports. This task is made more complex by the augmentation of the review team by additional staff drawn from the Department and from CSD. Typically and according to the subjects

to be examined such additional staff will include those with specialist experience in accountancy, automatic data processing, operational research, organization and methods, personnel management and staff inspection.

Working papers are submitted to the Steering Committee by the review team as the work progresses. It is customary for the leader of the review team and the senior CSD member of the team to attend all meetings of the Steering Committee. They are usually accompanied by those other members of the team who have been in charge of the particular studies which are being reported on and discussed.

During the course of the review it may be possible for the Department to initiate action to implement particular proposals without awaiting the outcome of further studies. However, as the studies are interrelated and have been designed to contribute to examination of the selected issues, it is usually necessary to await completion of the review before the Steering Committee can make recommendations on major organizational questions. The main eventual recommendations by the Steering Committee are embodied in a final report which is submitted to Ministers. The Department is expected to follow its normal procedures for consultation with its Staff Side during the implementation phase. CSD agrees arrangements with the Department for periodic reviews of progress with the implementation of agreed proposals. The total period from the start of discussions to agree the date for a review until the final formal report on implementation can be of the order of four to five years.

Reviews completed

The programme began with a review of the Scottish Office which was completed in July 1973. Since then reviews of Home Office, Welsh Office, Inland Revenue, Treasury, Customs & Excise, CSD and MOD (including the Procurement Executive) have been undertaken. Reviews of the Department of Employment and of DHSS are currently taking place.

It was originally thought that the programme might take about eight years to complete. Changes have occurred in the number of departments in the programme, e.g. as a consequence of the splitting up of the Department of Trade and Industry and, more recently, of the Department of the Environment. It now seems unlikely that the current programme can be completed until 1981 but this, if achieved, would not be far off target.

What aspects do reviews cover?

The preliminary survey is intended to result in proposals which meet the particular situation and needs of the Department under review. It is not possible, therefore, nor would it be desirable, to provide a simple and consistent description of the subjects covered by management reviews. Some have examined major questions of organizational

structure and one was also concerned with the grading structure; all have examined some management systems. Despite the considerable differences of emphasis it is, however, possible to discern an emerging pattern in respect of particular aspects and these now tend to be examined in all reviews. It is, perhaps, not surprising that this pattern should have emerged since it relates to subjects which would generally be accepted as lying at the heart of the management processes.

The aspects which have become established as regular topics include the organizational arrangements at the top of the Department for co-ordinating the planning processes. Planning in this context embraces the procedures for analysis and review of policies and for resource allocation. A management review does not normally include an analysis of particular policies themselves; this is outside the scope of the reviews and would require additional resources and skills and more time. The management review interest in planning is in the organizational arrangements for selecting policies for analysis and for review; in the systems for planning and controlling resources; and in the top-level machinery which assists the Permanent Secretary in managing the affairs of the Department under Ministerial direction.

The interest in planning and resource allocation extends to the supporting systems for planning and controlling financial and manpower resources. The reference to systems is important. Although management reviews may include studies of particular parts of the organization a noticeable feature has been the examination of the management systems which operate throughout the Department. Such studies cross organizational boundaries. They are concerned with the definition of the procedures which comprise a particular system; with the consistency with which those procedures are operated; and with clarification of responsibility for prescribing and monitoring the system. Examination of the financial and manpower systems thus extends to consideration of the roles of the Principal Finance Officer and Principal Establishment Officer. This requires consideration of their relationships with the Accounting Officer and with operational and other line managers; and also of the delegations of authority to and by them in respect of money and manpower. It also embraces the arrangements for audit and staff inspection.

Reviews have sometimes included a study of selected aspects of personnel management. Besides considering the role of the PEO in respect of personnel matters and the delegation of authority to line managers, such studies have usually examined particular procedures such as those for Job Appraisal Reviews, for management succession, or for career planning.

What has been achieved?

Although the primary purpose of management reviews is to assist departmental top management to improve its organizational and managerial arrangements, the reviews are, as I have emphasized,

also intended to give expression to the central interests in the organization and staffing of departments and in the development of good management practices. An expanded statement of the aims of management review would have to encompass these interests. It might, perhaps, read somewhat as follows. The aims of management reviews are to help the top management of each Department to improve the effectiveness and efficiency of its organization and management including the planning and control of resources; to do so within the context of the currently agreed general systems and procedures for the Civil Service; to contribute to the development of those general procedures; and to assist the central departments in discharging their responsibilities in respect of various aspects of organization and management in the Civil Service. These aims are essentially long term in character. Although significant economies have been achieved on some reviews it would be incorrect to judge them by reference to immediate savings in manpower.

This attempt to amplify the main aims of the management review process serves to indicate the different interests which have to be borne in mind in seeking to evaluate the outcome. It also shows that there are no simple and readily available yardsticks against which results can be measured. The views of different parts of CSD concerning particular reviews would probably reflect the different interests of the various Divisions. Departmental views would also vary and would be bound to reflect the extent and nature of individual involvement in the review and its outcome. Moreover each review is bound to be influenced to a considerable extent by the experiences, personalities and expectations of the principal characters concerned. In these circumstances I shall refrain from attempting an overall assessment of the benefits of the process particularly as I would be seen as a biased witness.

It can, however, be claimed that management reviews have been increasingly successful in tackling major high-level organizational questions. In the Scottish Office review, the arrangements for co-ordinating its separate departments was a key issue. In the Inland Revenue review the major questions included the federal nature of the organization of the Department and the related structure of departmental classes. The Welsh Office review also examined the senior command structure under the Permanent Secretary and its capacity to ensure effective co-ordination over a disparate range of functions. The review of the Ministry of Defence tackled similar fundamental questions concerning the top structure including the roles of the Defence Council and Service Boards; the relationships between administrative, military, and scientific hierarchies at various levels and the Accounting Officer structure. In all these cases, study of the management arrangements at the highest levels was assisted by related and objective studies of the systems for planning and controlling financial and manpower resources. In all these cases significant changes were agreed to be desirable.

It may also be of some significance to note that the programme is now well established and to record that we have never been kept waiting for a Department to agree that a review should take place. It is also right to record—even though it may not serve to satisfy the cynic—that CSD has subjected the process to critical scrutiny, has considered carefully various subjective indicators of success and has instituted systematic arrangements for follow-up action. And whatever may emerge from our continuing attempts to compare the costs with the results achieved I am personally convinced of one major though intangible benefit. The process engages the senior officers of a Department in a corporate and objective review of its top structure and main management systems: such a process is bound to be beneficial.

Readers may like to be reminded of the titles that are available in the Management Services Handbook series, published by CSD Management Services. They are:

E.125 *Typing services* (44 pages, price 45p)
E.130 *Forms control* (38 pages, price 60p)
E.132 *Centralized dictation systems* (25 pages, price 45p)
E.133 *Transport management* (32 pages, price 55p)
E.134 *Microcopying systems* (55 pages, price £1·30)
E.136 *Management accounting in the Civil Service* (76 pages; price £1·10)
E.137 *Glossary of accounting terms* (28 pages)

Also available

E.131 *Guide for new managers* (36 pages; price 55p)

Departments may obtain copies from HMSO through their normal departmental publications demand channels. Persons and organizations outside the Civil Service may obtain copies from Civil Service Department (MSSU), Room 2/100 Old Admiralty Building, Whitehall, London SW1A 2AZ. Orders must be accompanied by a cheque or postal order, made payable to 'Civil Service Department'. The prices quoted above include postage (within UK).

Bridging the Information Gap

A Participative Approach to Problem-solving in a Civil Service Pay Office

J. HUNTER and D. B. CRAMPTON, Civil Service Department

John Hunter and David Crampton are in the CSD Job Satisfaction Team, which is part of Personnel Management 4 (PM 4) Division. —*Editor.*

Introduction

The work of CSD's Job Satisfaction Team has been touched on in these pages several times in recent editions. Keith Robertson's early article dwelled on the underlying philosophy of our work.[1] David Pace and Derek Burden have also contributed pieces describing different aspects of the Team's activities.[2,3] The present contribution is an account of another variation on the basic theme of job satisfaction work and describes the project undertaken at the Civilian Pay and Records Office, Bath—CPRO(B)—a unit under the control of the Director-General of Defence Accounts (DGDA).

Background

CPRO(B) employs approximately 600 staff. It is a Senior Principal command with responsibilities among others for paying 91,000 monthly and 24,000 weekly paid staff. Organizationally the office is divided into two Principal commands: 'Pay', a predominantly clerical organization which handles the weekly, monthly and specialist pay accounts, together with the various supporting tasks such as accounting, internal audit, registry and office administration; and 'ADP', which controls the systems design and programming work associated with the complex pay system, the design and promulgation of the clerical procedures followed in 'Pay', the systems and programming work associated with the MOD's Civilian Personnel Management Information System (CIPMIS), and the administration and operation of two ICL 1900 computers. The office is located on one site at Warminster Road, Bath, and is housed in single storey, wartime accommodation. It is a busy, often hectic place where deadlines are important and time is precious—there is nothing

1. 'Job Satisfaction in the Civil Service—A Perspective' by K. B. Robertson, August 1973 edition.

2. 'A Job Satisfaction Approach to a Management Problem' by D. E. Pace, November 1975 edition.

3. ' "New Model Office Project" in DHSS' by D. Burden, February 1976 edition.

like having to pay 115,000 customers accurately and on time to concentrate the mind on the essential priorities.

Our arrival on the scene in the summer of 1975 coincided with, and stemmed directly from, a period of very considerable change in the development of CPRO(B). The office itself had been in existence from about February 1973 when the first accounts were taken on to the new computer, and it was in the throes of expansion. The new centralized pay system was being steadily introduced throughout MOD and various problems associated with a major programme of conversion from the variety of former manual, semi-automated and computer pay systems were affecting both Pay and ADP sides of the office. In addition, as the conversion programme proceeded, large numbers of new staff were being recruited, trained and settled into existing and newly formed pay sections. This put additional strains on training, supervision and the relatively few experienced pay clerks. On top of this, the Civil Service had in 1974 and 1975 negotiated a series of complicated and retrospective pay agreements covering most of the major grades and classes paid by CPRO(B); the complexities of these new arrangements, the speed with which they were to be implemented, and the inevitable repercussions on a new system with a high proportion of relatively inexperienced staff led to many difficulties, much frustration in the office, and a challenging task for management.

The initiative for our intervention came originally from the local Staff Side who at a DGDA Bath Office Whitley meeting asked for some positive steps to be taken by management to tackle the problem of poor morale among the staff which was being engendered by the kinds of pressures and difficulties outlined above. Management were, of course, well aware of the problems and frustrations being experienced by their staff. They also recognized the importance of such problems and of the kind of issues outlined in Keith Robertson's article referred to above. They had conducted their own investigation into the morale problem in CPRO(B), and the Director-General, Mr. George Emery, was later to talk publicly on what he called a 'sea change' under way in the relationships between management and staff in the Civil Service. This all culminated in a request from the management of CPRO(B) to CSD's Job Satisfaction Team to examine areas of dissatisfaction in CPRO(B) and make proposals for improvement in morale.

When we came to CPRO(B) our team was a fairly large one—three people from CSD and one, an Administration Trainee, loaned from DGDA. The AT was able to provide a good deal of local knowledge and colour for about a month and this was invaluable at the early stage. One of the CSD team members left after a couple of months to work on another project so that Job Satisfaction resources committed to the work in Bath for most of the time was two people. Once project activity got under way in 1976 this was reduced to one person permanently allocated, with another two providing occasional support.

Fact-finding

After a preliminary reconnaissance, we decided to concentrate our early attention on the Pay side of the organization where it seemed to us the most tractable problems lay. However, it was clear that many of the issues would not be contained within any one part of the office, and that we would soon need to involve the ADP side as the issues emerged and developed.

Our preliminary method of enquiry had two main aims:

(*a*) First, to get a broad picture of the staff's feelings about their working climate and environment.
(*b*) Second, to be seen by, and speak to, as many people as possible within the organization (in the end, we calculated that about 250 people contributed in some way to the views we formed about CPRO(B)).

To do this we decided to administer a very simple 20-question survey to everyone in the pay offices. We each took parts of the pay office and, working with the EO-led Pay Sections, talked to groups of staff at their desks, explaining who we were, what we were trying to do and asking them to complete the survey while we waited.

From the responses of the people to the survey, and from their comments and discussions which occurred spontaneously in many of the groups, we produced a short list of common problems. These were broad headings such as:

(*a*) Communication.
(*b*) The physical surroundings.
(*c*) Participation and consultation with management.
(*d*) Training.
(*e*) The Pay Instructions—their adequacy and usefulness.
(*f*) The supply and availability of information to help pay clerks with their job.
(*g*) The reputation of CPRO(B) with its customers.

We then produced a brief paper summarizing the survey results and these main themes and, with the agreement of management and Staff Side, fed them back to all those who had contributed to the survey.

We were very careful to make it clear that these themes were the ones that the staff themselves had identified as the main problem areas, and in our next stage we invited groups of staff to discuss these particular issues in more detail with us so that the broad themes began to take a more recognizable shape. At this stage we brought in groups of ADP staff as well, because many of the issues, such as communications and pay instructions and the whole question of information, crossed functional boundaries. We also had interviews with key individuals in the organization (such as the SEOs with large clerical commands) and we constantly kept in touch with the Staff Side and senior management.

Proposals for change

At the end of the process we could have withdrawn and written a report. But in this case we did not. Both senior management and the Staff Side had by now made it clear that they wanted a continuing presence with no artificial hiatus in the activity which was beginning to build up some interest in the office. Our next step was, therefore, to produce quickly a summary of progress to date, and proposals for future action. This we did in the form of a short discussion paper which we talked through with senior management and Staff Side, and which formed the basis of separate discussions between management and Staff Side, and between senior and middle management.

The main theme of this discussion paper centred on the frustration with the operational short-comings which staff from both sides of the house (Pay and ADP) were experiencing. They felt that these malfunctions prevented their doing properly what most of them felt was a demanding and worthwhile job. (This helped to reinforce our belief that there is a coincidence of interest between job satisfaction and effectiveness of performance.) Chief amongst these short-comings was a group of problems which, lumped together, formed what we called the 'Information Gap'. The gap had a variety of features having covered a range of inter-connected problems, for instance:

(*a*) The Pay Instructions, and their adequacy for day-to-day work.
(*b*) Communication between Pay and ADP, its effectiveness and quality.
(*c*) The understanding of mutual problems between the two sides of the office.
(*d*) Overlapping and sometimes conflicting responsibilities for trouble-shooting and liaison.

We did not pull any punches in this document, and we felt it was very much to the credit of management in CPRO(B) that in the interests of free discussion they were prepared and indeed anxious to circulate the paper not only to the Staff Side, but to every individual member of staff.

In the paper, we made it clear that it was basic to our philosophy that since it was the staff (predominantly from CA to HEO) who had identified the problems which we had co-ordinated and presented to management, they should have the opportunity, in consultation with senior management, to investigate them thoroughly and produce constructive proposals for change.

Clearly, it would be necessary to establish some machinery to turn the philosophy into a practical programme of action. We suggested that an all grade working party, subsequently renamed 'Team', representing interested parts of the organization, should be established to co-ordinate this activity. Its task would be to decide on a plan of campaign and on priorities for investigation; it would consult at all levels in the office, hold meetings with groups of staff on specific issues and ultimately pro-

duce some agreed proposals for change for discussion with the head of CPRO(B). We had it in mind that the team would concentrate in the first instance on the 'Information Gap' range of problems and that some assistance from the CSD Job Satisfaction Team would be required to help with the processes of fact-finding, consultation and decision-making within the group—though *not* with the actual decisions they reached.

The way ahead

CPRO(B) management, in discussion with the Staff Side, decided that the team should be composed of staff from CA up to HEO levels and entered into the spirit of the thing by suggesting that they should ask for volunteers to man this team. The result was that we had almost an embarrassment of riches with nearly 100 volunteers eager to take part in this novel process.

A Joint Management/Staff Side group picked 11 people from the list of volunteers and the 'Information Gap Team' held its first meeting on 20th November 1975. At this meeting the team decided to act as a central co-ordinating body which would set up small task groups to examine specific issues and which would receive recommendations and reports from these task groups. It was hoped to make as much use as possible of the people who had volunteered for the team when these task groups were set up.

The team in action

There then followed six months of hard work by the team and the task groups it set up. Against the background of unrelenting pressure to accelerate the pay conversion programme—pressure which was certainly not lessened by a Public Accounts Committee investigation into the time taken to introduce the MOD pay system—weekly meetings were held by the team under its EO chairmanship. The issues dealt with in that period were varied but focused mainly on the problems to do with the 'Information Gap'. Some examples of the work of the team at that time were as follows:

(*a*) The team proposed a training and familiarization scheme which was accepted by management, whereby staff would spend some time in other sections so that they gained an understanding of how their own work related to work in other parts of the office, e.g. Pay Office EOs and senior COs spent time with the ADP Liaison Section.

(*b*) Set up a Pay Office Instruction Task Group under the chairmanship of a young clerical officer from a monthly pay office to consider the needs of the pay clerks in the way of procedural instructions and the interpretation of regulations. After investigations which included the preparation and distribution of a questionnaire to all pay clerks the task group made proposals about the content of

pay office instructions and management took action to improve them by re-writing, removing detail from chapters to appendices, expanding certain appendices and providing an index.

(*c*) An Observation Procedure Task Group under the chairmanship of an executive officer from the Accounts Section was set up to investigate the formal procedure whereby Pay Office staff drew attention to possible faults in the pay system by raising 'Observations'. This led to a clarification by management of the 'how' and 'why' of the formal procedure. An explanatory memorandum was issued and certain improvements and streamlining of the procedure were introduced with the result that the originators of observations obtained prompt feedback on how their enquiry was being tackled.

The team provided a useful means of improving the understanding by both executive and clerical staff of the complexity of the computer system, a forum for ventilation of their ideas, a channel for suggesting improvements and for drawing management's attention to their real needs on matters related to the work. The team tackled most of the items listed in the early discussion paper which were capable of resolution by CPRO(B) internally.

The workshops

The next stage was an attempt to review the progress and the attitudes of staff in general towards what had been going on. We were at this stage becoming concerned about the lack of involvement of middle management in project activity and taking these two needs, the review of progress and the involvement of middle management, together we decided to hold two one-day management workshops at a suitable local venue to consider the job satisfaction exercise, the past, the present and the future. The purpose was to review the effect of job satisfaction work in CPRO(B), to identify outstanding issues and to examine the scope for the future development of the work in the office.

The workshops were held at the University of Bath in June 1976. The main issues which emerged from the discussions could be categorized as follows:

(*a*) The need for good communications throughout CPRO(B).

(*b*) The need for co-operation and understanding between Pay and ADP.

(*c*) The desire for more involvement in the decision-making process on the part of middle management.

(*d*) The uncertainty among the middle managers about the way ahead for job satisfaction work. This consisted mainly of:

  (i) Questioning the effect of the project on line managers' accountability.

  (ii) Concern about the composition and status of the clerical teams and task groups set up as part of the job satisfaction project.

(iii) Doubts about the efficiency of the machinery so far set up.
(iv) The need for greater depth and breadth of understanding of the job satisfaction philosophy and process.

Two main conclusions seemed to emerge from all this:
(*a*) That these were questions of substance for CPRO(B) management to tackle, and
(*b*) The job satisfaction project needed to have greater acceptance in the crucial area of middle management.

Consolidation

It seemed important, therefore, in the last few months before we left CPRO(B), to ensure that the basic machinery for job satisfaction work in the office should be strengthened and formalized so that the problems identified at the workshops could be tackled from a firm base. With this end in view, two basic tasks were accomplished during the autumn of 1976:

(*a*) The Steering Committee, formerly an *ad hoc* committee of management and Staff Side, was formalized. It now consists of eight people—the Head of the office with his two Principals, three Staff Side members nominated by the DGDA Bath Office Whitley Committee together with the Chairman and one other member of the CPRO(B) Job Satisfaction Team. It meets at least quarterly and its scope includes all matters which affect the working environment in the office and the job content of individuals. Among these matters are:

(i) Improvement of staff skills, management, team spirit, communication and co-ordination throughout the organization.
(ii) Involvement of individuals and of groups in decisions which will affect their way of working.
(iii) The grouping and content of jobs and the motivation, job satisfaction and efficiency of the staff.

(*b*) The Job Satisfaction Team in the office has also been placed on a more formal footing. It now becomes a vehicle for investigating the matters listed at (*a*) (i) to (iii) above and may seek advice and guidance from the Steering Committee on its methods of working. It consists of 12 members from the various parts of the office and will have a 50 per cent turnover of membership every six months. The team was reconstituted in its new form in January of this year.

Whilst these constitutional changes were being worked out a programme of other activities had been going on under the direction of the original job satisfaction team in the office. For example:

(*a*) A task group was set up to examine the role of clerical assistants

in CPRO(B) and has made proposals about the work they do and how they are employed. Discussions with management on the group's recommendations are now being held.

(*b*) A task group was set up to make proposals concerning the complicated 'decanting' arrangements made necessary by a planned uplift of the accommodation at Warminster Road.

(*c*) Other issues being examined include training for managers, the setting up of reference points in each pay office and a celebration to mark the successful completion of the conversion programme.

Taking stock

The descriptions in the preceding paragraphs outline the broad progress of the project and principal happenings over a period of about 18 months. What it does not attempt to do is to describe the role of the CSD consultants responsible for the project, the tasks we performed and the way we tackled them. This is a complex and difficult subject which deserves separate treatment—suffice it to say here that the broad philosophy underlying our approach to the work—'not doing things to people, but helping people to do things for themselves'—meant that we attempted to make our contribution supportive and non-directive rather than leading and didactic.

What did we learn from the project? Some fairly simple and obvious things were made clear. First, changes in organizations need the co-operation and goodwill of *all* levels of staff. We had the support of senior management and the junior staff but middle managers were uncertain of the methods we employed and tended to adopt a passive attitude to what we were trying to do. Our approach to the project was to start at the bottom. We felt we could carry middle management with us as we went but in the event we underestimated the confusion and uncertainties that the 'bottom up' approach would bring. This approach tended to reinforce fears that middle managers would be by-passed and denied a role in what we and senior management hoped would be a new approach to tackling the organization's task. This view of middle management came out strongly during the workshops held in June. These cleared the air considerably and led directly to the much clearer definition of the roles and responsibilities of the office's Job Satisfaction Team and the Steering Committee.

There is even now, despite some improvement, still some way to go to convince middle management that the benefits to them and to the office of the job satisfaction approach outweigh the risks and that the principle of accountability is preserved. There is no easy or quick solution to this and, certainly, nothing is going to be achieved overnight.

For us, the lessons are clear—that all levels of the hierarchy must be equally involved in what is going on in project work; there is some truth in the thought that a broad approach such as we adopted—trying to influence the whole organization straight away—has dangers as well as attractions since some groups can be neglected; perhaps it

is better to start small and expand, particularly when your resources are limited, than, metaphorically, to campaign on a broad front.

A second area of learning for us concerned the role of the local Staff Side in the project. Since our arrival on the scene was due in some part to Staff Side pressure, we felt from the beginning that the local unions would be helpful—so it proved. In the event, local representatives helped us by encouraging people to volunteer, by forming, with management, the *ad hoc* Steering Committee to oversee the progress of the work in the office, and by giving support and encouragement to the work at every opportunity. This active help was highly valued during some of the more difficult times and underlined the importance of developing good relations and working closely with local union representatives.

One of the major problems which faces any consultant attempting to encourage change or new methods in an organization is the tyranny of the pressing day-to-day workload. In a busy office such as this was, where, as we have said, time and deadlines are critical, the amount of time that could be allocated to open-ended and free-wheeling work of the kind that is essential in the early stages of job satisfaction work was strictly limited. On the whole, this worked in our favour since it helped to concentrate people's attention on the issues at hand; but for one or two of the people who bore the brunt of the organizing and administering of job satisfaction activities in the office the burden became severe and we were conscious both of our indebtedness to those key individuals for their prodigious labours, and also of the effects these extra tasks would have on their normal daily work.

No formal evaluation of the project has been undertaken. This is not an oversight, but an acknowledgement that we did not know of any satisfactory way of assessing clearly the effects of the job satisfaction work in the office. The workshops in June were partly an attempt to sound out opinion among middle management about their experience of and attitudes towards the project, and this was successfully accomplished. But it was a different matter to obtain any reliable objective measures of the effects of job satisfaction work, particularly when so much had been changing in the organization during the 18 months of our involvement there. Our own, probably biased and subjective, view is that the project has been a limited success. Some of the ideas and philosophy of job satisfaction work have been discussed and put into practice in a large busy office; the results and changes that have been accomplished have been relatively unspectacular but real none the less, and the working method has now been firmly established under the direction of a properly constituted joint management/Staff Side Steering Committee. Given the traditions of the Ministry of Defence, the pressures of the task being performed in the office, the unusual and imprecise nature of the message we brought and the deliberately low-key and non-directive role we played, the final outcome was unlikely to be revolutionary; but we are confident now that the ground-

work has been properly laid for further developments within the office as the need arises.

Tailpiece

Finally, and perhaps to bring a slightly different view on the project, we asked Alan Fitz, Senior Principal in charge of CPRO(B) to provide a paragraph of comment on the project as he has seen it so far, and we also invited the local representatives of the CPSA and SCPS, Jean Buffery, Roy Harle, and Derek Green to give a Staff Side view of the work undertaken to date.

Rather than offer two separate accounts, the Job Satisfaction Steering Committee prefer to add a joint tailpiece to this article. They do this because since the project began they, first as an *ad hoc* steering group and now as a formal Steering Committee, have sought to discuss CPRO(B)'s problems openly and to maintain a unanimity of view. They accordingly asked themselves what CPRO(B) now has that but for CSD's project they would have been without; and commented as follows:

> The simple answer is that it has its own permanent Job Satisfaction Team. It was not set up, however, without a deal of apprehension because the way CSD went about its task puzzled many members of the staff, and middle managers in particular felt that CSD's approach did not pay sufficient attention to their role and position in the office. Also, some felt that the pace of the debate on job satisfaction issues was unnecessarily forced at times. These misgivings led to some slowness in the building up of their confidence in the value and objective of the exercise. Nevertheless the introduction of job satisfaction has been an achievement and we are agreed that it:
>
> (*a*) Encourages a positive attitude towards achieving improvement and making CPRO(B) a more effective organization.
> (*b*) Broadens the experience of all who participate in its work and affords an opportunity for better understanding of the intractable nature of some of the problems which face us.
> (*c*) Demonstrates that participation by all grades is worth while.
>
> Will these advantages endure? We recognize that not everyone wishes to initiate change. Many seek only a clearly defined job under a reasonable management, and their contribution to the organization is no less than that of their more vigorous fellows. There are no signs, however, that the pace of change and CPRO(B)'s need to adapt to it will slacken. We must all make the best use of the talents that we have. Having sampled job satisfaction we think that it has become part of our way of life. And if we can say that it has stirred 'an enthusiasm for the work and a desire to improve' the CSD team can feel satisfied that their time in CPRO(B) has been well spent.

SEO/Principal—What's in a Name?

J. McGHEE, Scottish Office

Mr. McGhee is a Senior Executive Officer in the Management Services Unit, Scottish Office. —*Editor.*

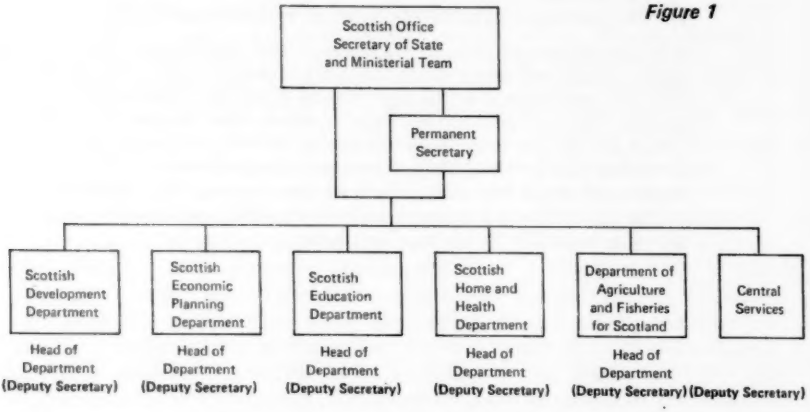
Introduction

As the 'Establishment Division' caterpillars emerged over the last few years as 'Personnel Management' and 'Manpower and Organization' butterflies many of them have been faced with a particularly difficult question: 'How, in the absence of large blocks of executive case-work, can we maintain a reasonable balance between SEO and Principal posts to facilitate career development without over-grading?'. The practical answer to this question has been as elusive as the butterfly metaphor would suggest.

As an illustration of how widespread the problem is our examination of the staff in post figures produced by CSD revealed that on 1st April 1975, almost 30 per cent of the departments listed had equal or greater numbers of Principals than SEOs. The people we spoke to in those departments all admitted to being concerned about the problems thus created but had no readily available solutions.

The Scottish Office is particularly worried about the apparent lack of good quality SEO posts and the growing imbalance of numbers in the Principal and SEO grades so we, in the Scottish Office Management Services Unit, were asked to consider the problem and to report our

Figure 1



conclusions. This article presents some of the ideas we produced in our report in the hope that readers with similar problems will share their experiences and ideas with us. I should emphasize that both our report and this article express our own opinion and not official Scottish Office or CSD policy.

Scottish Office organization

I think it would be helpful at this stage to explain briefly how we are organized. The Scottish Office as an entity is responsible to the Secretary of State for Scotland, who decides the departmental organization most appropriate to his needs. At present, as shown in *Figure 1*, we have five departments concerned with government functions and a central services unit which provides Personnel, Finance, Computer, Legal and Management Services functions.

For convenience we can group the first five together and call them the line or functional units of the Scottish Office. The typical organization of each of these units is shown in *Figure 2*.

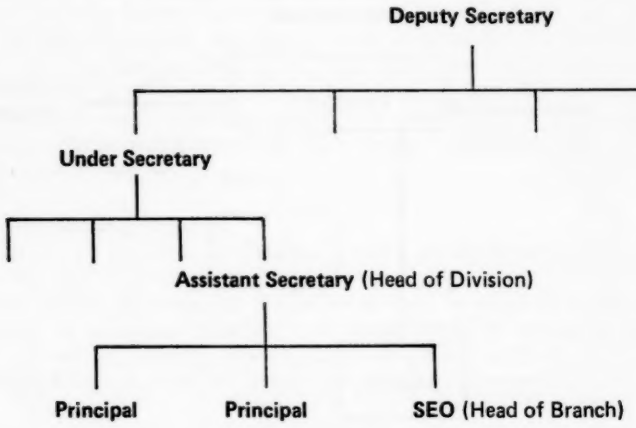


Figure 2

Manpower trends

Our main brief was to try to identify the factors which distinguished the duties appropriate to SEO and Principal posts respectively but our first step was to find out the extent of the problem. We discovered that the balance between the two grades had remained remarkably stable overall since 1971 (which is a convenient date because of the merger of the executive and administrative classes).

Closer examination revealed that the overall figures concealed a growing disparity between staff and line. The general pattern is that an increasing percentage of the SEO posts are in central services with

head of branch posts in the functional areas becoming more and more the province of the Principal grade. Newly created branch head posts are usually at Principal level and since 1974, within a total of less than 100, 15 SEO posts in the line units were up-graded to Principal. Like all statistics, these have to be interpreted with caution and all of these regradings had to be justified to those responsible for complementing and grading.

However compelling the need for up-grading or for new posts to be at Principal level the general trend is worrying especially since it is beginning to assume an air of inevitability. There are those who ask why we ought to worry; who take the view that because of the nature of Scottish Office work we could well lose even more SEO posts and that we should accept the fact.

The first response to that argument is that to do away with all SEO posts in line units is not economically sound since not all head of branch posts merit Principal grading. In effect the Department would be paying out more than it would be getting back. The second response is that we are constrained by a national grading system and the requirement to provide for career management.

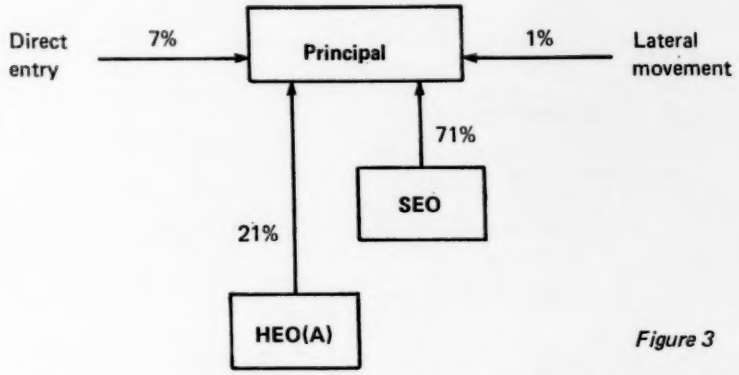


Figure 3

Figure 3 shows the methods of entry to the Principal grade and also, in percentage terms, how the present numbers of principals in the Scottish Office arrived there. The 'HEO(A)' box includes previous fast streaming systems. The make-up of the grade and the absolute numbers in both grades mean that instead of a regularly stepped route through the grades we have a shape like *Figure 4*.

Almost all the HEO(A)s are likely to be promoted, but the proportion from the SEO grade is much lower. Many of its members have reached their career grade but some are likely to be promoted further. In order that management can assess that ability and to give SEOs themselves a chance to display it and to gain experience the Scottish Office needs to have a range of suitable posts for SEOs. Instead, in

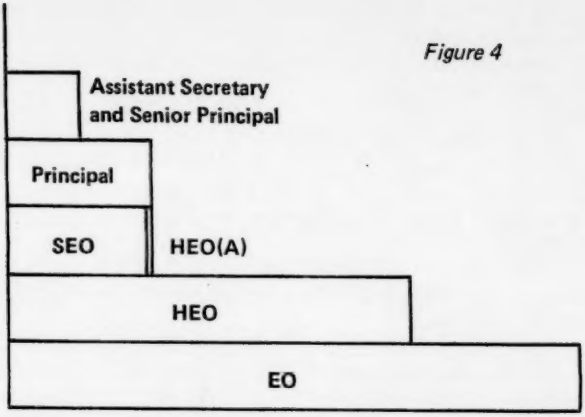


Figure 4

relative terms, the number is diminishing in the line units which are precisely the areas where they are most needed.

What we require, therefore, is an increase in the number of head of branch posts at SEO level, but before that can occur we have to find some way of identifying the factors present in head of branch posts and distinguishing which combinations of these factors fall within the competence of the SEO grade and which require the qualities of a Principal.

Overcoming history

The classic pre-Fulton division of work in the Service as a whole was policy for Principals and managerial/executive/case-work for CEOs and SEOs. Historically SEOs were seen as part of a closely linked chain of command dealing with large blocks of executive work or as the heads of discrete units dealing with such work as, for example, a local office manager in DHSS or specialist case-workers.

This pattern never obtained in the Scottish Office because we did not have this type of work in sufficient quantity. We have very close contacts with Ministers but we operate mainly at one remove from the private citizen or industry via the work of executive agencies such as local authorities and health boards. We do not have the large clerical organizations which provide the foundation for a complete hierarchical system. Indeed, in the functional units it is relatively rare to find a branch with both a Principal and an SEO.

Yet the old attitudes about 'policy for Principals—case-work for SEOs' still persist and have not been fundamentally changed by the unification of the administrative and executive classes. Indeed, calling CEOs 'Principals' may even have reinforced the old prejudices by apparently assigning to the combined grade the qualities of the 'old-style' Principal. Certainly the SEO grade is frequently perceived as

being fitted mainly for executive work despite the fact that such work is relatively scarce in the Scottish Office. In other words SEOs are not being considered for all the posts for which they might be suitable.

The old attitudes do not help with present problems but does that necessarily make them wrong? The Scottish Office does have a large number of 'policy' jobs at Principal level, which call for intellectual qualities and political judgement of a high order, but we have a larger number of jobs which are termed 'policy' but which turn out to be circumscribed by existing practice or regulations or are confined to dealing with the Scottish aspect of policies decided in Whitehall. We believe that when a divisional head seeks to fill a policy job he should be asked to describe in detail how much innovative thought or decision-taking is required.

We do believe that the attitudes are wrong and that a better way exists. We examined a number of head of branch posts covering as many different types of work as possible and the basic conclusion we reached, fundamental to all grading considerations at this level, is that we ought to stop thinking about grades within groups in compartmental terms. We have to end the idea that certain grades are, by reason of the grade label, automatically fitted for or disqualified from performing certain types of work. If a unified administration group is to mean anything we have to think of SEOs and Principals as being at different points in the same structure and grade the posts not by kind of work but by degree of responsibility or job weight.

Which point in the structure?

Even if this message is accepted we still have to find a satisfactory method of deciding where in this structure particular posts should be placed. We studied job evaluation literature and systems, and sought the advice of CSD. Unlike many private companies, remuneration in the Civil Service is firmly fixed to grade, and given this constraint it would not be appropriate for an individual department to use points rating or similar job ranking methods. Anomalies would be bound to result and this would have repercussive effects across the Service.

What we eventually suggested is a compromise which avoids the mathematical correlation of the component parts of the job but utilizes the four main factors—problem-solving, decision-taking, representation and staff management—some, or all, of which are present in varying degree in all head of branch posts. For each factor we supplied a definition and then included two or three sub-factors which we described in terms appropriate to Scottish Office work.

We did not attach points or weightings nor did we suggest that any one factor was more important than another, but we did suggest what the top and bottom of the range for each sub-factor might be. The mix will vary from job to job and even when two jobs have the same predominant factor the level of input required for effective performance can be very different. Grading is not an exact science and there

will always be scope for argument about the importance of particular factors to particular posts. What we are trying to do is to illuminate such argument by focusing attention on the important details and providing a structured framework within which subjective judgements can be made.

Educating line managers

Factor analysis of jobs will not, of itself, produce more SEO heads of branches. We need to improve our internal communications so that there is a stronger link between the personnel management and the complementing functions within the central unit. We also need to inform heads of divisions about grading criteria so that they can make a fair assessment of their needs. Above all we need to become more responsive to changes in work content. Quality of work in the Scottish Office, as in other government departments, is not static but can change dramatically within a short space of time and, more importantly, not only can the quality of work change but so too can the type of skills needed to perform that work. For example, the intellectual and time demands for the preparation and parliamentary approval of a Bill are generally higher than those required for the maintenance of the schemes established after the Bill has become an Act. Similarly if public attention suddenly becomes focused on a particular aspect of government policy, the pressures on posts dealing with that aspect are frequently increased.

For example, the planning policy in those areas where North Sea oil has made an impact is more often and more deeply questioned than in the days before oil was discovered. This has increased the political sensitivity of the post and thereby increased the level of drafting and presentational skills, political judgement and speed of reaction required of the post holder. When or if controversy over oil and its impact on the landscape fades then such a high level of these skills will no longer be necessary and their possessors could be more profitably employed elsewhere.

The understandable desire of heads of divisions to retain the best officers has to be resisted if the most economical use of manpower is to be achieved. Central management must therefore encourage Assistant Secretaries to recognize that gradings will follow work patterns and that the up- or down-grading of a post is not for all time. Heads of divisions must also be prepared to seek the appropriate grading for posts whenever there is a significant change in the quality of the work. We recognize that the changing of traditional attitudes will not happen overnight but will depend upon a build-up of mutual trust over a period of time. We also believe that the extra investment required in the manpower and organization units will pay a good dividend.

Conclusion

We do not claim, Archimedes style, to have found 'the answer' but we

hope that in this article we have mentioned a few ideas which could be used to make the problem less severe. Before any of them can work, however, we require, first and foremost, a determination on the part of management to reverse the prevailing trend. If we can get this commitment the mechanics of how the reversal takes place become easier to manage. If the end is willed there is no doubt that the means will be found.

Some recently published titles

International Dictionary of Management: A Practical Guide by H. Johannsen and G. T. Page. Published by Kogan Page Limited in 1975. Now available in paperback; 416 pages; price £4·95.

Networks Explained by F. Offler. Published by National Computing Centre (NCC) Publications in loose-leaf form; 529 pages; price £15.

Informatics and Administration. Published by the International Institute of Administrative Sciences, Brussels, with the participation of the Intergovernmental Bureau for Informatics (IBI), Rome (1977; 286 pages; price B.Frs.400).

Using Simulation to Solve Problems by T. Poole and J. Szymankiewicz. Published by McGraw-Hill Book Company (UK) Limited (333 pages; price £10).

An Analytical Approach to Physical Distribution Management by R. Willis. Published by Kogan Page Limited (239 pages; price £8).

Training Research Register 1976–1977. Published by Her Majesty's Stationery Office for the Training Services Agency (498 pages; price £9·50).

Hurt or Helped? A study of the personal impact on managers of experiential, small group training programmes by C. L. Cooper and D. Bowles. Published by Her Majesty's Stationery Office for the Training Services Agency (Training Information Paper 10; 44 pages; price £1).

—Editor.

Data Processing Professionalism—A Must or a Myth?

D. W. CROISDALE, Civil Service Department

Derrick Croisdale is Head of Automatic Data Processing training in the Civil Service College (Specialized Training Wing). In the article that follows he expresses some personal views. —*Editor.*

Expectations not realized

In 1974 the Civil Service decided that computer work for administrative systems was a 'functional specialism' within the Administration Group of civil servants. This meant that the range of work associated with computer work was seen to require similar skills and training of a specialized nature not normally associated with the general duties of the Administration Group. It was thought that the implementation of the functional specialism would facilitate the development of highly professional experts needed to design, implement and operate computer-assisted administrative systems.

Now, three years later, it appears that expectations are not being realized. There are no signs that highly professional experts are emerging in the numbers needed. Why not? In my view it has become apparent that computer work is not a homogeneous grouping of skills. Rather the opposite. It is a spectrum of skills with quite dissimilar extremes. If one functional specialism is not producing the goods, what will?

The answer—A binary chop!

The spectrum of skills can be sub-divided neatly into two dissimilar groups. One is best described as hardware/software engineering. The people in this group are computer specialists who design, procure, produce and operate the hardware and software combinations needed to meet an end-user's functional specification. In the Civil Service an occupational group may be the best solution—centrally managed but geographically mobile.

The other group is best described as management services. The people in this group do such things as: work and methods study, O & M, systems analysis and design and overall project and systems management. The skills in this group have a lot in common and require considerable knowledge of end-user functions, organizations and procedures. The people in this group benefit from career development

which allows them to migrate between management services and end-user jobs, hence a functional specialism is appropriate for them.

Characteristics of a profession

The computer in its many guises and roles is a powerful tool for administrators and managers. Immensely beneficial in the hands of competent people, immensely damaging in the hands of the incompetent. The aim of this article is to explore ways in which we in the Service can ensure that computer work is done consistently well.

A profession has a number of characteristics—competence and personal responsibility are probably the two most relevant for our purposes. In a profession competence is measured partly by examinations based upon a teachable body of knowledge and partly upon performance. Murray Laver[1] draws a distinction between 'professional' and 'member of a professional body'. So far as I am concerned the distinction is a fine one, but as there is one then I would prefer our practitioners to be full members of professional bodies, because this implies adherence to standards, acceptance of responsibilities, measurable competence and, most important, participation in the development of the profession.

Data processing professionals—The context

Computers are used within government for military and civil purposes; this article is concerned only with the Civil Service.

In 1976 there were about 120 computer installations serving the Civil Service and the capital cost of the installed hardware (excluding terminals and data preparation equipment) was of the order of £70 million. There is one computer installation for every 4,000 non-industrial civil servants. Expressing it another way, there is about £140-worth of computer power per civil servant.

The rounded numbers of civil servants directly engaged upon computer-related work as at March 1976 are as follows[2]:

Management	250
Systems and programming	5,400
Operations	3,300
Data preparation, etc	7,800
Headquarters, etc	1,000
	17,750

1. 'The Relevance of Professionalism' by Murray Laver, *Computer Bulletin*, Series 2, Number 9, September 1976.

2. CCA summary of ADP staff as at 31st March 1976 covering Administration/Data Processor grades, Scientific/Professional and Technology grades, etc, and Service personnel (i.e. Armed Forces).

If we subtract those engaged upon data preparation, etc, we are left with about 10,000 people who will claim—rightly so—to be doing computer work and who may aspire to professional status.

An anatomy of computer work

The analysis I adopt to define computer work is based on the systems model of administrative and commercial organizations. A system in the sense I shall use it is the orderly arrangement of interdependent activities and related procedures which implements and facilitates the performance of a major activity of an organization. It is universally accepted that related activities and procedures can be grouped into sub-systems but it then becomes necessary to define the boundaries and the relationships between sub-systems and their environments.

So far as data processing is concerned it is necessary only to identify and define one type of sub-system within a total administrative system. The sub-system is the computer system which I define as the combination of on-line hardware and software associated with a central processing facility. The environment of this sub-system is the remainder of the total system—which in an administrative organization comprises mainly human activities and procedures. For ease of reference I call this part of the total system the host system; it emphasizes the correct relationship between it and the computer system. Today's computer people refer to host-system people as 'users'. The host-system's purpose is determined by administrative or management requirements defined at a higher level; the computer system is merely a means of attaining the host-system's ends. It follows that the computer-system's requirements ought to be defined for it by the host system—not vice-versa as sometimes happens!

In my view computer professionalism ought to be confined to the work associated with designing, procuring, developing, implementing and operating the combinations of hardware and software which comprise the computer system as earlier defined. Appropriate job titles would be, for example, DP Manager, Computer System Designer, System Software Programmer, Application Software Programmer, Operations Leader.

By contrast systems analysis (that ubiquitous, misunderstood and much abused task)—which I will later define so that you know what I mean!—is a distinctly separate activity. Related to computing but distinct from it is a view of systems analysis advanced by David Firnberg, Director of NCC. Similarly the design, organization, methods and management of the human activity found within the host system is not a computer professional's job. It is more likely to be part of the systems analyst's role.

Seen through American eyes—We're all users now!

Six prestigious experienced American data processing practitioners

have recently made a study of potential limitations to progress for the benefit of SHARE Inc,[3] an organization of users of large data processing systems, predominantly supplied by IBM. They have tried to predict the environment and the status of data processing systems in the years 1980-1985 with special emphasis on large, general-purpose, business-oriented systems. They point out that professional survival may depend on a correct assessment of impending changes.

In order to determine the requirements for future data processing systems the SHARE study group found it necessary to define a taxonomy of people involved in data processing. This is their taxonomy:

(1) *System support users.* The installation's computer experts who create and maintain the Installation Control Program (i.e. the interface between the operating system and application programs). They are the custodians of the installation's data, information and software.

(2) *Mid-users.* At present they comprise a mixed bag of analysts, designers, programmers and 'methods' specialists. This is a problem group because of their wide range of duties. Their overall aim ought to be to create an optimized *total* system not merely an optimized computer system.

The mid-users' work is made difficult by the following factors:

(*a*) Need to know about computer and communications technology.
(*b*) Need to know about the end-users' specialisms.
(*c*) Need to understand end-users' capabilities and limitations in organizational and behavioural senses.
(*d*) Need to be a skilled practitioner in a complex craft which has no underlying scientific basis.
(*e*) Need to provide for ways to accommodate changes in operational requirements, capabilities and technology.

The authors of the study state that the fact that mid-users will still be needed by, say, 1985 is, in a way, unfortunate. At some time in the future mid-users will cease to be needed.

The work of this group will, in my view, migrate in two directions:

(*a*) To the system support user (as already described).
(*b*) To the end-user (described below).

The adoption of data-base management systems will encourage the first migration—isolating the application programmer even further from the data processing facilities—whereas the end-user will assume responsibility for systems analysis in its true sense. Thus mid-users will gradually become designers and producers of application software (a

3. *Data Processing in 1980-1985* by T. A. Dolotta *et al.* Published by John Wiley & Sons, 1976.

sufficiently demanding job if tackled professionally)—and nothing else.

(3) *End-users*. These are sub-divided into three:

(*a*) Direct end-users—they are input/output control clerks, data preparation operators, etc.

(*b*) Intermediate end-users—they are the functional experts (management and staff in accounting, production, inventory control, etc). It is in this area that systems analysis ought to reside to enable this group to investigate and analyse the operational requirements and to define rigorously and unambiguously these requirements to the mid-users.

(*c*) Indirect end-user—what some would call the ultimate customer. Someone who interacts with the *total* system.

The plug and socket concept

When a standard electrical plug is inserted into a standard socket the power requirements are automatically defined and power flows to satisfy the need. The people who extract fossilized fuel from the earth, those who transport it, those who convert it into electrical power and deliver the power to a socket are completely detached from those people who design and manufacture electrical appliances. This leads to specializations on both sides of the plug and socket interface which lead to efficiency and thus to economy.

Translating this into a philosophy for computer-assisted systems, what we need are methodologies of design and implementation to enable applications to be plugged into computer systems with the same facility as an electrical plug into a socket. Such a facility is necessary because we are concerned with two very dissimilar systems—one comprising electro-mechanical activities (the computer system) and the other human activities (the host system).

On the socket side we need computer system designers, programmers and operations staff. On the plug side we need systems analysts, organization and methods practitioners acting on behalf of the direct and intermediate end-users.

Time to describe what I mean by systems analysis!

A person engaged in systems analysis would do the following:

(*a*) Investigate an existing system.
(*b*) Analyse the findings.
(*c*) Design the total system.
(*d*) Communicate the design to all interested parties.
(*e*) Assist in the design of the host system.
(*f*) Assist in the implementation and maintenance of the total system.

Activities (*b*) and (*c*) are especially demanding and require the rigorous application of a range of methodologies, techniques and aids which at present are incapable of being used by the majority of mid-users

because the range of their duties is too diverse. They cannot be experts in everything. It should be noted that a systems analyst should not be expected to produce detailed program and file specifications as if he were a senior programmer.

Systems analysts may well have some computer-related experience early in their career but will also have worked in other functional areas. In my view we must recognize that systems analysis is not strictly computer work.

Computer work and the arithmetic of program production

Computer work ought to comprise the system support users (including operations) and those mid-users engaged in computer systems design and programming. Their prime professional allegiance would be to the British Computer Society. Let me examine the ways in which software can be produced from an organizational point of view. This will cast some light on the type of structure appropriate for computer work.

(1) Using the CCA summaries of ADP manpower at 31st March 1976 the average team structure for program production is as follows:

1 SEO
5 HEO
15 EO

One can make assumptions about average national salary costs and arrive at an average team cost:

1	×	£5,500	= £5,500
5	×	£4,500	= £22,500
15	×	£3,000	= £45,000
			£73,000

Let us assume 4,000 lines of operational code are produced each year by an EO programmer and virtually none by HEOs and above.

So this team's output is 60,000 lines of code at a cost of £1·20p per line.

(2) Let us now take an approach based on IBM's Chief Programmer Team Organization (CPTO):

1 SEO	=	£5,500
1 HEO	=	£4,500
4 EO	=	£12,000
		£22,000

All members of this team will produce code; assume their output per person is no more than the above team.

So this team's total output is 24,000 lines of code at a cost of 90p.

Although the second team's average salary cost is higher than the first's, the cost of production is lower because all members of the team are productive.

The philosophy behind CPTO is that one develops highly-skilled chief programmers and then exploits their skills in *small* teams. There is evidence which suggests that hierarchical teams with wide spans of control (like (1) above) are not the best instruments for software production. The evidence of CPTO-style of managements suggests that the team's output may be expected to be as high as 50,000 lines of code a year. If one wanted to produce 1 million lines of code in two years one would need 10 such teams with a super-management structure to do the design, de-composition and project management.

Professionalism—A must or a myth?

I have no doubt in my own mind that it is a must. But, furthermore, two professional activities are involved, not one. Computer work is one professional group comprising computer system design, programming and operations—for which an occupational group may well be appropriate. The other major professional activity is systems analysis which has more in common with management services work than computing; the required personal qualities, qualifications, nature of work and career development are quite different from the first group. Systems analysis should be regarded as a management services function for which a functional specialism is the appropriate treatment for the practitioners concerned.

The Computer Record System at Newcastle Central Office

S. E. STAPLEY, Department of Health and Social Security

Mr. Stapley is Operations Manager, Records Division, Newcastle Central Office, DHSS. In the article that follows he describes the Revised National Insurance (RNI) computer-based record system operated by the Division, with particular reference to its difference from the clerical system formerly operated by the Central Office's Records Branch, now known as Records B Ledgers. —*Editor.*

Development and maintenance of the computer record system

The pre-RNI manual record system

The first system set up in 1947/48 was a clerical operation using ledger sheets to record flat rate contributions and provide information for flat rate benefits. This organization, known as Records Branch, was generally respected for its prompt and efficient service. It was based on the concept of four staggered contribution and benefit years. The system was possible because the mechanics of collecting contributions were entirely within the Department's control and it enabled the work connected with the collecting and recording of contributions to be spread fairly evenly over a whole year.

The computer graduated contribution record system

The second system (which operated alongside the clerical system) was the computer-based Graduated Contribution Recording system set up in 1960/61. The computer file was created from the flat rate clerical records and kept in the same manner (i.e. by National Insurance number). Since its function was limited primarily to the recording of graduated contributions and the identification of persons approaching pension age, the information held was also limited to basic personal detail and the graduated record. The new concept introduced was the earnings related contribution collected via the PAYE tax system and tied to a single tax year rather than the four staggered years as for flat rate. The fact that a vast volume of work descended on the system after the end of each tax year, and that it took most of a year to clear, was not particularly important since the system was concerned only with long-term benefits and there was adequate provision temporarily to cover for any unposted contributions.

The graduated computer record was extended from 1971/72 to include the posting of earnings as well as graduated contributions from

deduction cards and from January 1973 the system answered ERS (Earnings Related Supplement) enquiries as well as dealing with persons approaching pension age. Still the system did not need to match the Records Branch speed of response because generally ERS inquiries did not require a reply by return.

The computer RNI system

It was from this background that the RNI recording system was eventually developed. The fact that contributions were to be earnings related pointed inexorably to a full collection via the tax system, and these two factors plus other complexities pointed equally inexorably to a computer-based operation, it being clear that no economic clerical system could cope in the timescale required.

Decisions were taken as long ago as 1967/68 as to the nature of the new organization, and the equipment and accommodation required were based on what was then known of possible legislative requirements plus the need to effect changes for decimalization by 1971. Having some idea of the inflexibilities of computer systems and the near impossibility of making changes at short notice, the teams then involved tried to devise a file layout and an operational system that they hoped would cope with most possibilities. 'File' in this context is a series of records, analogous to clerical records, held on magnetic tape. Each record contained basic information, mainly of personal detail, and there was provision to include optional extras.

The system first proved its worth when it was decided to record the earnings information mentioned above. The system was fairly quickly adapted and came into operation on schedule.

Transfer of detail from manually kept ledger sheets

The fundamental change of dealing with a computer- rather than a clerically-based system has only made a real impact since the start of RNI. Increasingly, local offices are having to deal directly with the computers without the cushion of an intervening clerical organization since Records B Ledgers is rapidly withdrawing from its original role to an archival state. It is clear that a fuller understanding of the new system is required, and an attempt is made to provide this in the following paragraphs.

First of all, the computer records are being built up from the basic graduated records by adding information culled from Records B and other sources. The graduated records held no information about benefit claims (other than ERS) or benefit relevant notes, and other details were also lacking. During the winter of 1975/76 details of more than five million married women's options were taken on by punched cards prepared from the surrendered 1974/75 exempt cards. The exercise was by its nature imprecise since it was dependent on the availability and identification of cards, and there is also inevitable scope for error in a job of this magnitude. Concurrently details of fore-

names were taken on by direct punching from the Records B ledger sheets (the graduated records only held initials).

It was decided that take on of benefit information should be done in two parts—short-term benefits and long-term benefits. The short-term benefit exercise is well under way. It is being done by producing schedules from computer records for completion by Records B clerks. The completed schedules are then microfilmed and the filmed information is transferred to magnetic tape by means of an advanced piece of Optical Character Reading equipment, Grafix 1. So far, details from over 20 million accounts have been transferred to the computer file. To the extent that take on is not completed when short-term benefit claims are received, replies are routed via Records B Ledgers to add any further information and to take any necessary transfer action.

Long-term benefit take on is less urgent and can be dealt with on a long-term basis. Meanwhile information is being taken on on an 'as required' basis. Thus instead of identifying persons four months in advance of pension age, the system now identifies them six months in advance and sends the appropriate inquiry to Records B Ledgers so that the computer account can be brought fully up to date by the four month point.

File up-date

To 'up-date' the file (the records on magnetic tape) means to post to individual accounts details of contributions and other amendments received. To up-date the whole file (an 'Up-date Revolution') may take from one to three weeks according to whether the revolution is standard or whether some other action—e.g. statement issue, credit seeking—is being done as well. The file is ordered in 100 sections in the same way as the clerical ledger records and up to 20 sections (20 per cent of file) may be up-dated in a day. Information cannot be added to an individual account until the section of the file that it is in has been reached; and that may take time.

Receipt of standard and non-standard documents from employers

Class 1 contribution information is mainly received via Inland Revenue on deduction cards and here is one of the main fundamental differences from the flat rate system. Instead of getting a nice steady flow of cards for posting shortly after a tax year has ended, the first of a flood of some 30 million deduction cards begins to arrive, building up to a peak of receipts in mid-summer but continuing at a substantial rate until late October or early November. About one-third of the cards are single copy standard documents which have to be returned to Inland Revenue within 10 days.

In order to retain a permanent base in support of the computer records and for document retrieval purposes, all deduction cards (and the facing card of each employers' scheme) are first of all numbered and microfilmed. This film is processed within Records Division and,

once it is confirmed that the film is 'good', the deduction cards can be released to the punch bays for punching.

In addition to receiving contributions on deduction cards, some 7 million items are now received on magnetic tape from employers. This saves data preparation work but means that, because Inland Revenue are not computerized, the system has to print out an equivalent number of deduction cards plus schedules for Tax Offices and employers. Since many Offices are almost totally dependent on getting these cards and since employers too want their tapes back urgently, some priority is given to the processing of magnetic tape schemes. This is possible during April because normally the intake of deduction documents is low but by mid or late May there are other items competing for priority.

Class 2 and 3: Cards and direct debit

In addition to the Class 1 contribution information, Class 2 and 3 contributions are received on stamped cards (and some by the direct debit system) and there is a steady flow of amendment information. Not all of this is microfilmed but all has to be translated to punched cards in the same way as other contribution items.

Contribution document processing operation

The organization has rather more than 500 Univac Buffered Punches which are used to translate contribution, amendment and benefit inquiry information to punched cards. From deduction cards are punched 14 characters of identifying information (National Insurance number, first three characters of surname and up to two initials), contribution category letter, total contribution and employee's contribution. Earnings are not punched as they are no longer required and the total contribution is used only for ratio check purposes after which it is dropped from the system, only the employee's contribution eventually being recorded on the individual account. From the facing card are taken the leading microfilm reference number (the computer automatically allocates sequential numbers to the following deduction cards), and abbreviated form of the employer's name, the number of cards in the scheme and the total of National Insurance contributions.

The punch bays have the capacity to punch about 2 million contribution items from cards and schedules each week. Obviously punching cannot be completed until all schemes are in, but perhaps less obvious is that, because of the pattern of receipts and the available microfilming and punching capacity, quite a backlog of work builds up. It is, of course, quite impossible to staff for the peak load. Priority is given to clearing standard schemes since the documents are required back urgently by Inland Revenue.

Punched cards are controlled in batches (by Punch Control Section) and are sent to a card reading room where card readers transfer the information to magnetic tapes in the computer halls. During this process, the program applies a number of feasibility checks (e.g. that

the National Insurance number consists of two alpha, six numeric and one alpha characters).

Reconciliation, ratio and compatibility checks

Magnetic tapes are read through computer input programs which perform more checks and balances before sorting the input into an order suitable for up-dating the main file. In addition employers' schemes are subjected to a reconciliation check which compares the total of individual contribution items with the total from the facing card. Schemes which fail to reconcile, subject to a disregard, are put on to a suspense file and details are output for clerical examination. If the discrepancy cannot be resolved quickly, the clerical section releases the scheme by amending the facing card total and then pursues enquiries until the query is cleared. At the input point too, the ratio check is applied to individual contribution items. Those which fail the check and for which the computer cannot allocate a category are identified and if they find a matching account are noted on the account and then put on a store tape (see below). If they do not find a matching account they are treated as non-matching items first and that aspect must be cleared before the ratio check failure can be dealt with. There are provisions for rejecting complete schemes if the proportion of missing National Insurance numbers or ratio check failures is too high.

Contribution items which find matching accounts are subjected to compatibility checks—e.g. that a reduced rate contribution is validated by an option on the account, that the contribution is paid for someone within the liable age limits, that the account is not in excess. Any such item which is rejected on compatibility grounds is recorded on the accounts, an appropriate indicator is set, and details are also output to the store tape. Contribution items which fail to match either because there is a discrepancy in identity details, no account on file or no number on the item itself are also recorded within the system on a special part of the file and details are again output to the store tape unless the cash value is below a disregard figure.

The store tape

As will be apparent by now, the store tape is a holding area for queried items. Such items are held by their respective types (known as divisions) and the date on which they entered the system is also recorded. There is provision to arrange for release of items from the store tape by division and date during the running of the output programs following a run of up-date. Thus it is possible, for example, to ask for all compatibility checks up to a specified date to be output.

When a queried contribution item (other than non-match) is released from store, two things are produced—a paper output which goes to a clerical output handling section and a search card which goes to a microfilm search section. Output handling hold the output forms until the appropriate microfilm copies are received. After linking, the

documents are despatched to their respective destinations, a job which may entail considerable sorting.

In the case of a non-matching item the output goes directly to Microfilm Search Section and after linking is sent to Ledgers, Index, Inland Revenue, etc. It may be of interest at this point to note that the computer operates an ingenious Index system for numbered items and this operation enables correct accounts to be traced for many hundreds of thousands of items which would otherwise be output for clerical action. Where correct National Insurance numbers are traced, by whatever means, for previously incorrectly numbered items, a cross-reference is put into the system.

Access to records: the manual record and the computer

The foregoing is a very broad description of the contribution recording system but enough to point the major difference from the old clerical system. The latter was operated by over 2,000 clerks, every record was virtually instantly accessible and, if a particular card had not been posted, the clerk could at once look in the card run and see if it was there. Further, the clerk could apply human intelligence and common sense to a situation. Even if there were no specific instructions the clerk could normally sort out what was required or find someone who could. It will be obvious that in the kind of system now necessarily being operated documents are not instantly or even readily accessible and that once an item had entered the process it was dealt with in accordance with an inflexible set of rules. The systems programming teams have to try and envisage every conceivable circumstance and combination of circumstances that may arise and instruct the machine accordingly. If a situation arises for which the computer has not been programmed, and it is easy to see that in a scheme of the complexity we are trying to operate it is beyond human capacity to cover every aspect in one go, it cannot deal with it. In such circumstances either the item will be rejected or the whole program will come to a halt. A further inflexibility is that the computers can only be accessed in an authorized and stereotyped manner. You cannot ring up a computer or put questions or information to it in free form. The computer cliché is 'garbage in, garbage out' and hackneyed though this may be it is nonetheless true. That is why input is subjected to such stringent feasibility tests for format and content.

Response of system to inquiry service

Dependence of speed of response on procedural accuracy

Over 40 million accounts are held on the computer files and these have to be referred to every day to reply to inquiries. Every day Records Division receives from Local Offices and Unemployment Benefit Offices (UBOs) benefit and other inquiries for which urgent replies are required. A closely controlled system has been organized to ensure as far as possible that a rapid service is maintained, but it will emerge from

the following description that at best this service must be 24 hours worse than the old clerical system (there are, of course, compensations in the shape of the additional calculations the computers do). If the correct referral procedures are not followed the delay may be considerably longer—for example if unnumbered inquiries are included in pouches together with numbered items it is likely that they will go first into the computer system instead of being referred directly to Index. This further increases the delay which arises from the fact that, because of accommodation difficulties, General Index is at present located several miles from Records Division.

Benefit inquiry operation

From 50,000 to 100,000 benefit inquiries alone arrive in Records Division each day. On receipt these have to be collated into numbered batches (for control purposes) and passed to Punch Rooms to be translated on to punched cards. Inquiries are afforded priority at all stages. Punched cards are assembled into 'Units' and throughout the day are sent to the card reading room where they are read on to tape in much the same fashion as items for file up-date. Appropriate feasibility checks are applied. As a general rule input cannot be accepted for the day's inquiry run much after 3 pm because to delay the start of the run by more than a few minutes could mean that output is not ready for despatch as required at the start of the next day's normal business.

In the case of claims handled by the Reading and Livingston computer centres, inquiries are made and replies are given in machine readable form. Pending introduction of a system for transmitting the information along a Post Office land line (which is expected to come into operation soon), magnetic tapes are physically transported between Newcastle and the centres. Apart from the method of receipt and despatch, these inquiries are processed in the same way as the clerical ones. If all goes well, the speed of communication eliminates the 24-hour worsening of a service noted above.

Search of the main file

Once the input tapes are ready they are read through a series of programs which sort and edit them into an appropriate form to be matched against the main file. This process alone may take up to three hours. Searching of the file is done quickly by spreading the work over the three large computers that are used and by running several search programs at once. Normally 20 ledger sections are searched simultaneously and by this means the whole file can be searched in about two hours. This is a 'find and copy' operation which results in copies of the relevant accounts and their associated inquiries being output on to new tapes.

The output tapes are then processed by further output programs which extract the information required and edit it into a suitable form

for printing. The end product of this operation is a series of print tapes containing replies for printing sorted into output types (so the right forms to be printed can be loaded on the line printers) and destination. Thus benefit replies for Local Offices will be in form order and in Local Office code number order within that type. Replies to go out via Records B will be in National Insurance number order. In addition to the 'successful' replies, there will be a substantial number of items rejected because, for example, they don't hit a matching account. These are put out on a separate form type.

Printing is carried on as a background job throughout the night. The object is to have replies printed, quality checked, and guillotined into individual forms ready for despatch by 8.15 the following morning. Until short-term benefit take on is completed many replies have to go through Records B Ledgers for any benefit relevant information to be added and transfer action taken as appropriate. At the beginning of the full inquiry service nearly 40 per cent of replies were having to be so routed but this proportion will reduce as the computer records are completed.

Items rejected have to be sent to Punch Control Section to be linked with the original input item (by means of the batch number). Any obvious input errors are corrected and residual queries are returned to their office of origin (about 10 per cent of input is rejected).

Operational constraints

The operating schedule is very tight and running can be affected by many factors not always within our control. Machine failures, environmental failures, corrupt data on tapes and so on occur from time to time and may impose delays varying from a few minutes to several hours. The night shift was introduced to give some provision against such contingencies but in practice the time is always needed for normal work. Perhaps it should be said in this context that the system is already operating under considerable pressure and the implementation of New Pensions with its associated demands for testing time on the computers is yet another straw on the camel's back.

The rigidity of the computer as against the former clerical system can again clearly be seen. A clerk could deal with an inquiry whatever time of the working day it arrived and a telephone call could always sort out an urgent case. Now an inquiry has to go through a formal and ordered sequence of events the main elements of which can only operate once a day. If the start of the computer run is missed, there must automatically be a further 24-hour delay before the inquiry can even be input to the computer. It is then more important than ever that inquiries are clear, accurate, properly addressed and put in the right pouch. Given a good input, the system will produce a good reply only 24 hours slower than the former clerical service. A bad input could impose substantial delay.

The computer—Your obedient servant

It is also apparent from the comments which flow to us from Local Offices that the distinction between the computer and that which enables it to do a job of work—the program—is not commonly appreciated. Programmers write instructions which are obeyed by the machine blindly and pretty well infallibly. The programmer has to attempt to anticipate every possible circumstance or combination of circumstances. Some of our large programs comprise up to 150,000 instructions. There may be tens of millions of possible paths which information may follow in such programs. Programmers are human and make mistakes. They make remarkably few, considering what they have to do. Unfortunately, a single mistake by a programmer can result in hundreds of thousands of wrong calculations, for example. Programs are checked and tested rigorously, but the odd fault, usually a failure to anticipate a particular set of possibilities, is inevitable.

Correcting program weaknesses or faults is not necessarily a straightforward job of simply changing an instruction. If information is coming into the program in a manner which was not anticipated whole pieces of the program logic may have to be rethought and rewritten, checked and tested. It takes time to do this. The risk that changes may have bad side-effects has to be guarded against. All this means that what is clearly a better way of doing a job, clear almost always only in the light of practical experience, may not be achievable in the sort of time-scale everyone, not least the programming people, might wish.

In addition to the main work flow described above, the computers also undertake a number of other substantial jobs—registration for example (involving the printing of some one million record sheets and associated index slips each year) and the reconciliation of well over 100 million Girocheques issued for short-term benefits, against Post Office claims and Local Office issues information.

The main object of this article, however, has been to try and give some impression of the different approach necessitated by the advent of computers. The kind of work that the Records Division is doing now could not be done without them and in the main they do their job exceptionally well. What hits the headlines is not the 99 per cent of work that is properly done but the one per cent that goes adrift. In relation to this it is all too easy to blame 'the computer'. However, the computer system can only be as good as the people who activate it, and that includes not only the immediately supporting clerical teams but also the staff in Local Offices and UBOs who make inquiries of it or send information to it. Some of the apparent shortcomings are inherent in the system itself—the long posting cycle is outside of computer control as is the system which produces excess payments of contributions in the first place. The operational system will evolve and be refined in due course but as indicated above changes, however desirable they may be, must take some time to implement.

Management Consulting in Perspective

Is management consultancy a profession? Whether it is or not a 'professional' book on the subject has recently been published.* The book is a collective effort drawing on wide-ranging experiences from many sources. The authors claim no more than that it is a first step to define a broad conceptual framework for management consulting and to prepare an international guide.

How far have they succeeded in drawing together the many threads of a service that is still evolving and, perhaps, changing more rapidly today than it has ever done before? Of course the book shows traces of its mixed origins. Of course it deals only patchily with some important aspects in its impossible aim to provide a comprehensive treatment. But the authors are more than modest—for this 'first step' contains nearly 400 pages full of earthy wisdom and the common sense that comes from diligent practice.

The plan of the book is ambitious indeed. Consulting is 'viewed primarily as a *method* for improving management practices'. Part I presents an overview with emphasis on the importance of the consultant-client relationship and on the role of consultants in the process of change. Parts II and III deal with the planning, conduct and control of individual assignments with emphasis on the need for diagnostic surveys *before* problems are defined. Part IV discusses consulting in specific areas, e.g. finance, personnel, data processing. Part V deals with the organization of consultancy services and Part VI the training and development of individual consultants.

My main criticism of the book would be that it does not wholly succeed in integrating the recent lessons of behavioural science's contribution to consultancy with the well-established principles of the classic, prescriptive O & M approach. Thus the substantial chapters on traditional assignment methodology seem to be intellectually separated from important material on 'process' consultancy and the dynamics of change. For example, Chapter 2 tells us that 'in a modern concept of consulting' the roles of expert and facilitator should be 'mutually supportive' but little follows on how to achieve this desired result in practice. Again, we are told that in an alternative approach 'the whole project is undertaken by the client staff and the consultant acts as a catalyst and adviser', but we are left to judge for ourselves when that approach is to be preferred to a more traditional one.

Specific references to organization development and the role of

* *Management Consulting—A Guide to the Profession.* Published by the International Labour Office, Geneva; price £10.

training in consulting operations are largely confined to a chapter on 'Consulting in Personnel Management', which opens with the unfortunate statement that the 'personnel management consultant' deals with the 'people' aspects of the organization and compounds this felony by muddling up personnel management functions (e.g. recruitment and career planning) with the personnel aspects of line management (e.g. management style and job enrichment). This artificial separation of 'people' and 'work' may be one reason why the description of assignment methodology lays insufficient stress on the scope for managers *and* workers to participate in diagnosis and problem-solving; on the frequent opportunities that arise in practice to implement changes *en passant* and to report (if indeed a report is necessary at all) afterwards; and above all on the need for a strategic approach which ensures that the client does not bite off more than he or the consultant can chew and that he relates his priorities of need to the available resources, and that where different consulting specialities are required their contributions are carefully planned and sequenced or integrated as the case may be.

In detail I should like to have found more material on management planning and planning systems, on the contribution of operational research and on the special problems of organizing and running internal consultancy services.

In their foreword the authors appeal for improvement suggestions and I have tried to respond. But I must conclude by reiterating that any weaknesses in this first edition* are more than outweighed by substantial and well-written coverage of carefully digested experience. I have no hesitation in recommending this report as compulsory reading for any practising consultant who still has the will to learn. There is much excellent advice for the newcomer but equally a good deal of stimulating stuff for those longer in the tooth. The book leaves me pondering three questions of relevance to my own consultancy organization which may equally occur to other readers:

(1) Do we do enough to encourage those with a flair for consultancy to develop suitable careers?

(2) Do we do enough by way of advanced training to ensure that our mature consultants are enabled to keep up to date with developing theory and to cross-fertilize with colleagues in other organizations or specialities?

(3) Have we solved the problem of integrating different consultancy approaches or specialisms, either through multi-disciplinary operations or through the strategic management of parallel or successive interventions?

C. J. H.

---

* Since the above was written a second impression (with modifications) has been published. —*Editor.*

Management Bookshelf

Mrs. B. M. HOWARD, Civil Service Department

Financial control of public expenditure has of late been the subject of much debate in this country. Management Accounting and Internal Audit are two of the means of promoting financial control that have been extensively discussed and are increasingly being used in government service. It therefore seemed appropriate to discuss some of the more recent books on these topics, which may be of interest to both accounting professionals and the line manager.

Management accounting itself embraces a variety of subjects such as financial and cost accounting, standard costing and budgetary control, investment appraisal, financial planning, and so on. As to an exact definition of the term, John Sizer in *An Insight into Management Accounting* (1969; Penguin; 70p; 341 pages) suggests that it is: 'The application of accounting techniques to the provision of information designed to assist all levels of management in planning and controlling the activities of the firm'. That is to say that the role of the modern management accountant is seen as embracing not only the traditional role of stewardship, but also that of decision-making, involving participation with the economist, the operational research specialist and the industrial psychologist in the management team. John Sizer's eminently readable book describes the information which the accountant should provide to management (and some of the techniques involved therein) but does not enter into a detailed explanation of the mechanics. It is designed to give insight to the manager by relating modern accounting techniques to essentially functional and practical situations.

Those seeking a more than general appreciation of the subject will turn to J. Batty's *Management Accounting* (4th edition, 1975; Macdonald and Evans; £5; 912 pages). This standard work is fully comprehensive and is used extensively by students of accountancy.

A recent title in the CSD's Management Services Handbook series is *Management Accounting in the Civil Service* (1976; 76 pages; HMSO General Service Form E.136). It is intended for the use of line managers and also for finance and management services staff. Its aim is to promote a wider understanding of the potential application of the techniques of management accounting within the Civil Service. Copies can be obtained by government departments from Her Majesty's Stationery Office, ITW division, via normal publications demand channels. Persons and organizations outside the Civil Service may obtain copies from CSD (MSSU), Room 2/100 Old Admiralty Building, Whitehall, London SW1A 2AZ; price £1·10 (including UK postage).

At this point it is, perhaps, also worth reminding Civil Service readers of another recent CSD Management Services Handbook: *Glossary of Accounting Terms* (General Service Form E.137; also available through normal departmental publications demand channels from HMSO, ITW division).

The Glossary defines internal audit as: 'An independent appraisal activity within an organization for the review of accounting, financial and other operations as a basis for service to management. It is a managerial control which functions by measuring and evaluating the effectiveness of other controls'. This technique has, of course, been used in government for many years, but the emphasis has now changed from the time when it was merely a check on the propriety of transactions to today's audit, with its increasing attention to the assessment and testing of controls and systems. The guide-lines which should be followed when organizing and operating modern internal audit in a government environment are described in *Internal Audit in the Civil Service* (1973; HMSO; 57p; 54 pages). It was prepared by CSD in co-operation with the Treasury Officer of Accounts and with the Exchequer and Audit Department. It is essential reading both for potential auditors and for managers who wish to keep abreast of current techniques.

The professional will also be familiar with Clive de Paula and Frank A. Attwood's textbook *Auditing: Principles and Practice* (15th edition, 1976; £4·95; 374 pages). The latest edition incorporates the changes and developments in auditing brought about by the issue of various statements of standard accounting practice; it provides detailed questionnaires and check-lists on how an audit should be carried out under the UK Companies Acts. For internal auditors the book is an excellent guide to the new approach to auditing and to the new procedures evolving, particularly to those relating to computer audit techniques.

'While the objectives of auditing are not affected by the manner in which information is processed, the introduction of computer processing does affect many of the procedures for accomplishing such objectives.' This extract from *Computer Audit Guide-lines,* published by the Canadian Institute of Chartered Accountants, explains the necessity for such guidance on the minimum standards and accepted techniques which should be observed in the audit of organizations using a computer. The volume is the second and final part of a report produced by an expert study group of the Canadian accountancy profession. Its preface, however, warns that it should be used only in conjunction with the first part: *Computer Control Guide-lines* (1970; £6·25; 135 pages) but that this title could be used by itself, without reference to its sequel (1975; £11·50; 318 pages).

This selection of books has been made with the help and guidance of CSD's Management Services (Accountancy) Division.

Letter to the Editor

The views expressed in Letters to the Editor are the writer's own, and not necessarily those of his Department.

Dear Editor,

I read with interest Mr. Phillips' article 'Reducing Expenditure on Postal and Telecommunications Services' which appeared in your May 1977 edition.

The introduction to the article invited ideas and suggestions which might lead to further savings. This note is by way of response to that invitation.

My Department has a lot of dealings with the general public direct and it is quite common for us to receive mail in 'unofficial' envelopes but which is marked OHMS. This mail was being paid for at the first class rate.

However, it was noticed at audit that the Post Office Gazette (No. 42 of 1976) included the following: 'The superscription "On Her Majesty's Service" or "OHMS" has no postal significance whatsoever and does not confer exemption from payment of postage. Therefore, any item found in the postal system bearing this superscription only, i.e. not bearing the "Official paid" emblem, nor any other indication that postage has been paid, should be regarded as unpaid. In accordance with normal practice such items should be afforded second class treatment.'

Since such mail is deemed to have received second class treatment, it followed that the Department should pay only the rate for second class mail, and this is now the case.

It is (conservatively) estimated that, for one Establishment alone, savings in excess of £2,000 per annum have resulted.

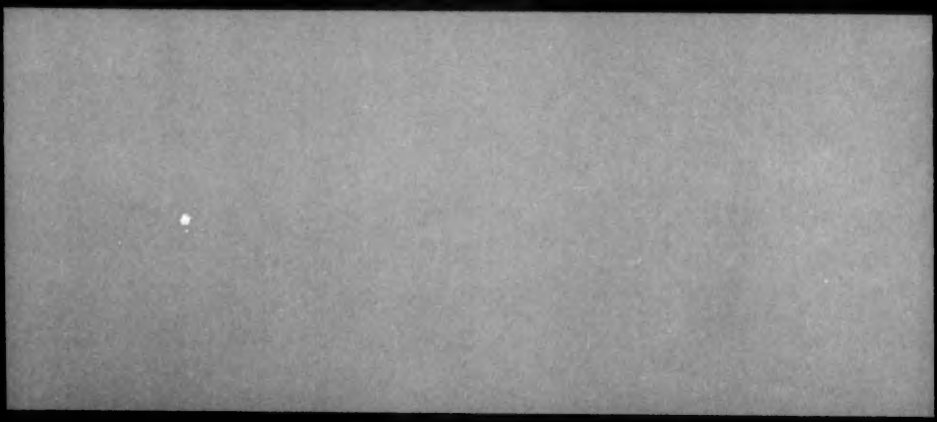
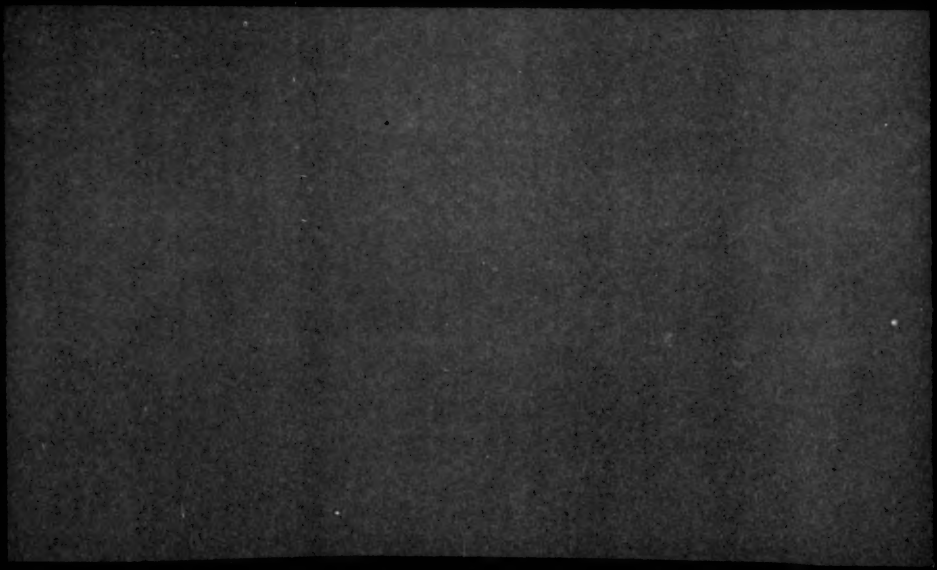
I trust you will find our small but real success story of interest.

Yours sincerely,

D. J. GOODMAN

Computer Installations for Government Departments

A list of all Government computers as at 1st January 1976 was published as a supplement to the May 1977 edition of MANAGEMENT SERVICES IN GOVERNMENT. Details of computers ordered during the period 1st January to 31st March 1977 are shown in the following table.

DATE OF ORDER	DEPARTMENT[1]	LOCATION	MAIN USES	MANUFACTURER[2] AND TYPE OF COMPUTER
1B Computers on order for administrative and general purposes				
January 1977	DHSS	Newcastle	Pensions and payroll projects	ICL 2980
February 1977	CSD	Norwich	Management accounting for HMSO and general bureau work	ICL 2976
2B Computers on order for scientific and technical purposes				
January 1977	Home Office	St. Albans	Development of scientific systems	DEC 11/34
January 1977	MOD (Navy)	Greenwich	Scientific uses	Prime 400
January 1977	MOD (Navy)	Alverstoke	Gamma camera diagnostics and medical research	Varian V76
February 1977	MOD (Navy)	Teddington	Scientific research	2 x Prime 300
February 1977	DTp	Crowthorne	Library and general scientific work	Varian V76

[1, 2] Refer to supplement to May edition for Department and Manufacturer keys.